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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/570,045	03/01/2006	Takemori Takayama	2006_0165A	1859

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WENDEROTH, LIND & PONACK, L.L.P.  
1030 15th Street, N.W.,  
Suite 400 East  
Washington, DC 20005-1503

EXAMINER
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MACARTHUR, VICTOR L

ART UNIT	PAPER NUMBER
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3679

NOTIFICATION DATE	DELIVERY MODE
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09/10/2010

ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

ddalecki@wenderoth.com  
coa@wenderoth.com

<b>Office Action Summary</b>	<b>Application No.</b> 10/570,045	<b>Applicant(s)</b> TAKAYAMA ET AL.	
	<b>Examiner</b> VICTOR MACARTHUR	<b>Art Unit</b> 3679	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 15 July 2010.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 6 and 57-67 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 6 and 57-67 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 15 July 2010 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948)                        | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

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### DETAILED ACTION

Note that applicant has failed to identify which if any of newly added claims 57-67 read on the elected invention/species. Response to this Office Action must make such identification in order to avoid a holding of non-compliance.

#### *Claim Rejections - 35 USC § 112*

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 6 and 57-67 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claims contain subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the invention **without undue experimentation**; or that the scope of any enablement provided to one skilled in the art is not commensurate with the scope of protection sought by the claims. In accordance with MPEP§2164, there is doubt "about enablement because information is missing about one or more essential parts or relationships between parts which one skilled in the art could not develop without undue experimentation". See *In re Wands*, 858 F.2d731, 737, 8 USPQ2d 1400, 1404 (Fed. Cir. 1988) and note the following so-called *Wands* factors:

- The breadth of the claims requires an alloy with a copper content of "10 to 95wt%" and at the same time a Molybdenum content of "35 to 75wt%". However, for copper

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contents above 65% the claimed molybdenum content is impossible since the total weight % would exceed 100%.

- The state of the prior art, skill level of one of ordinary skill, and predictability in the art is such that the total wt% of any alloy cannot exceed 100% (i.e., the total must equal the sum of its parts).
- The amount of direction provided by the inventor is not sufficient to allow for an alloy having copper and molybdenum in the claimed ranges that result in greater than 100% total weight.
- There are no working examples of alloys having greater than 100% weight.
- The quantity of experimentation needed to make or use the invention based on the content of the disclosure is infinite since it is impossible to create an alloy having more than 100% weight (nothing can weigh more than the sum of its parts). That is to say for copper content 66% or more it is impossible to have even the minimum claimed Molybdenum content of 35% since the total would be greater than 100%.

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 6 and 57-67 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

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- It is unclear how the claimed alloy can have a copper content of "10 to 95wt%" and at the same time a Molybdenum content of "35 to 75wt%". Note that for copper contents above 65% the claimed molybdenum content is impossible since the total weight % would exceed 100%.
- The limitation relative density of "80% or more" is unclear. Note that relative density (also known as specific gravity) is the density (mass per volume) of a substance divided by the density of a reference material (water, mercury, etc.). Without recitation of the reference material a magnitude (80% or otherwise) is completely meaningless. Does applicant mean to claim a material with a density that is 80% of that of some specific material? If so, what specific material?

For the reasons mentioned above a great deal of confusion and uncertainty exists as to the proper interpretation of the claim limitations. In accordance with the MPEP § 2173.06, rejection under 35 U.S.C. 102 or 35 U.S.C. 103 follows based on the examiner's best understanding of the claim scope. The applicant is strongly urged to carefully review the entirety of the claims and correct any additional clarity issues not noted above such that the claims fully conform to current U.S. practice.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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Claims 6, 57, 62, 63, 65 and 66 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takeshi JP-08-109450.

Explanation of this prior art is substantially similar to explanations set forth in the previous Office Action.

Claim 58 is rejected under 35 U.S.C. 103(a) as being unpatentable over Takeshi, JP-08-109450, in view of Gonia et al., 5,780,170.

Explanation of this prior art is substantially similar to explanations set forth in the previous Office Action.

Claims 59-61 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takeshi, JP-08-109450, in view of Kawamura et al., 5,370,725.

Explanation of this prior art is substantially similar to explanations set forth in the previous Office Action.

Claim 64 is rejected under 35 U.S.C. 103(a) as being anticipated by Takeshi, JP-08-109450, in view of Nakashima et al., 5,582,281.

Explanation of this prior art is substantially similar to explanations set forth in the previous Office Action.

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Claim 67 is rejected under 35 U.S.C. 103(a) as being obvious over Takeshi, JP-08-109450, in view of Gonia et al., 5,780,170, Kawamura et al., 5,370,725, and Nakashima et al., 5,582,281.

As this claim is a substantial combination of limitations from previous claims, explanation of this prior art is substantially similar to explanations set forth in the previous Office Action (albeit separately).

### ***Response to Arguments***

Applicant's arguments with regard to the claim rejections have been fully considered but they are not persuasive.

Applicant argues that Molybdenum content is not result-effective and has criticality (unexpected result) in the claimed range since 35 to 75% Molybdenum allows for optimum thermal expansion coefficient, conformability during sliding under high-bearing stress and high-speed sliding, excellent seizing resistance and abrasion resistance.

This is not persuasive as follows:

- Applicant's claimed an invention that is not possible/workable for all claimed ranges (see 112 rejections above) since the claimed ranges require the total weight to be exceeded by its parts (atleast for some of the claimed ranges). Accordingly, how can an impossible alloy composition exist much less be tested, and shown to have unexpected results?
- If applicant were to amend the ranges to be workable, note that applicant has also failed to show any test results showing any specific thermal expansion coefficient,

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- conformability, seizing resistance, or abrasion resistance, much less any such results that are due specifically and solely to the Mo content and that differ from what one of ordinary skill and knowledge would expect. Note that applicant has failed to submit any indication of what one of ordinary skill would expect from any specific measure of Molybdenum. In other words, Molybdenum and Copper have different densities, coefficients of thermal expansion, coefficients of friction, etc. such that one would expect that altering the ratio of molybdenum to copper would affect the properties of the resulting alloy thereof and thus one would optimize the material weight ratio of copper to molybdenum to optimize such alloy properties. Applicant has failed to identify that ordinary expectations based upon to common knowledge of copper, molybdenum, and alloys thereof would differ from what applicant has found in any specific way. That is to say that applicant has failed to show that the claimed Molybdenum and Copper content ratios would be expected to have poor results as apposed to applicant's allegations of satisfactory results.
- One of ordinary skill in the art (one skilled and knowledgeable enough to design, manufacture and use alloys containing copper and molybdenum) would know that Molybdenum content in alloys with copper has an effect on such properties as density, Thermal Conductivity, Thermal Expansion, etc. and thus would accordingly expect the specific Molybdenum to copper content to be optimizable (see attached Dorfman USPN 4822415 and NPL "JD Global Trading Company"). Accordingly, applicant's listing of positive results is actually evidence of obviousness rather than



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argument against since such results are to be expected in accordance with MPEP 716.01(c)(II).

- Note that MPEP 716.01(c)(II) states that “The arguments of counsel cannot take the place of evidence in the record”. Note that MPEP 716.02 states “Evidence must show unexpected results... burden on applicant to establish results are unexpected and significant... applicants have burden of explaining proffered data... **expected beneficial results are evidence of obviousness**” (emphasis added).
- MPEP 2144.04 states “**If the applicant has demonstrated the criticality** of a specific limitation, it would not be appropriate to rely solely on case law as the rationale to support an obviousness rejection” (emphasis added). However, applicant’s disclosure, and all other evidence of record, fails to set forth any **unexpected** result due to any specific Mo content over any other. Accordingly, the claimed Mo content lacks any criticality such that a rejection based on case law is appropriate.
- MPEP 2144 clearly states that “The rationale to modify or combine the prior art does not have to be expressly stated in the prior art; the rationale may be expressly or impliedly contained in the prior art or it may be reasoned from **knowledge generally available to one of ordinary skill in the art, established scientific principles, or legal precedent established by prior case law**” (emphasis added).
- MPEP 2144.05(II) details that where the general conditions of a claim are disclosed in the prior art finding the optimum or workable ranges by routine experimentation is obvious unless there is some unexpected result (criticality) citing *In re Aller*, 220

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F.2d 454, 456, 105 USPQ 233, 235 (CCPA 1955), see also *In re Reese*, 290 F.2d 839, 129 USPQ 402 (CCPA 1961).

- “[T]he results of **ordinary innovation** are not the subject of exclusive rights under the patent laws. Were it otherwise patents might stifle, rather than promote, the progress of useful arts. See U.S. Const., Art. I, section 8, cl.8.” In re KSR International Co. v. Teleflex Inc., 82 USPQ2d 1385 (U.S. 2007) (emphasis added). Accordingly, changing a trivial detail of the prior art (such as specific ratio of copper to molybdenum) is at best an “ordinary innovation” if any innovation at all, and therefore does not constitute sufficient reason for patentability.

### ***Conclusion***

Applicant's amendment (for instance the addition of “residue” in claims 6 and 67) necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

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however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Victor MacArthur whose telephone number is (571) 272-7085. The examiner can normally be reached on 8:30am - 5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Daniel P. Stodola can be reached on (571) 272-7087. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197.

September 8, 2010

/Victor MacArthur/  
Primary Examiner, Art Unit 3679